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EXECUTIVE AND PERSONNEL
MANAGEMENT
ON THE
NATIONAL FORESTS



A MEDIUM FOR THE EXCHANGE OF IDEAS AND
EXPERIENCES BY OPERATING EXECUTIVES
FOR THE BETTERMENT OF THE
SERVICE

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FOLLOW-UP TRAINING ON THE MOUNT HOOD NATIONAL FOREST

Region 6

by R. THOMAS CARTER, *Asst. Supervisor*

The Mount Hood National Forest and cooperative area of 1,459,270 acres, is located 45 miles from Portland, the largest city in Oregon. Due to its location and renowned spots of scenic interest, the Forest is visited by 700,000 persons annually. Along the northern boundary lies the world famous Columbia River Highway, over which thousands of cars pass each week. The southern part of the Forest is a lake decked playground, traversed by the Skyline road, which winds along the crest of the Cascade range between Mount Hood, an imposing old volcano of 11,225 feet in elevation, crowned with eternal snows, to Mt. Jefferson, another snow clad peak, rising 10,495 feet in majestic grandeur.

The timber on this Forest is classified by three broad types: Douglas fir on the west side, the true firs at higher elevation and ponderosa pine on the east side.

This Forest has large areas of old burns covered with snags in the Douglas fir type, which constitutes one of our highest fire hazards. Then to add to that, in the spring of 1931 a severe wind storm blew down millions of feet of green timber, leaving the ground like a large unburned fire logging slash, covered with trees from 1 to 7 feet in diameter, criss crossed and piled up as high as 40 feet from the ground. Most of this wind thrown timber lies in the lightning area on this Forest.

The causes of most of the fires on this Forest are about equally divided between lightning and man caused ones, with an average of about 100 fires per year.

The short term force consists of 95 men and approximately 150 men in the improvement crews.

There are approximately 500 local cooperators who have been trained and have received follow-up training the same as the guards.

At Zigzag Ranger Station early in June two three day training courses are held; each course accommodating three District Rangers and selected men from their short term personnel. Each course is attended by approximately 80 men.

Follow-up training is one of the final tests of the guard's ability to apply the knowledge which was presented to him by his instructors. It also keeps his mind alive to the application and test of his job.

On the Mount Hood there are two methods of follow-up training—personal and telephone contact. These methods are carried out by Rangers, foremen, protective assistants, Supervisor and Assistant Supervisor.

The Assistant Supervisor rides herd on all fire control activities and it is up to each District Ranger to have his men trained for the job or jobs assigned to them.

Each man who has attended the guard school is rated on his subject and his rating sheet is kept at his station in his copy of the Handbook for Short Term Protection Organization. Improvement men who have not attended the guard school are trained and rated by the foreman at their improvement camp. All new guards and other selected men are required to attend the guard school for three days and they are not paid wages while traveling to the school, attending the school or returning to their districts. The Forest Service furnishes food and transportation only, as our allotment is large enough to pay for only those two items.

Reminder lists which outline the various duties of a job on the Forest have been prepared. These lists and instruction books are issued to each man when he is first hired in the spring and at that time he is told in what jobs he is expected to become efficient.

Each man hired is told that he is expected to take part in the fire overhead and a reminder list is given him for the special job, as also for his regular job.

He is to study the duties of his job and be able to do them. The foreman is to see that the men study their instructions. He is to train the men in his crew and make a report to the Ranger concerning each man's progress and ability. This training is done on the man's time.

We find the reminder list necessary because we realize that as we go through the job with a man without a list, we are apt to overlook many vital subjects and later these omissions may prove costly. We believe it is better to give a man all the details and requirements of a job than to tell him in broad terms what is expected and then let him figure it out as best he can.

Each man is to actually show how he would do the work in his reminder list which can be demonstrated and to explain in detail the meaning of those jobs which cannot be demonstrated.

Public Relations work is carried on in as diplomatic a manner as possible. Guards who deal with the public practice approaching campers and other forest visitors and engage in conversation with them. They are not allowed to overlook the idea that we must sell to the public the importance of keeping fire out of the woods, how to build and put out camp fires and to gain the respect and confidence of all who visit the forest.

Law violation problems are presented to the guards and they are asked to tell what State law was violated and how the offender should be handled.

In order to save time the following reminder list has been prepared for lookout work, which covers the duties of that entire job. The lookout will go through the list and perform each job. In this way the guard does the actual work and the instructor becomes a good listener and keen observer and checks him on all the mechanics of his work.

There are several duties on some of the reminder lists that have no reference book to refer to. We are working up the detail duties for each and when completed each duty will then have a reference for the short term man to refer to for the complete details of the job.

LOOKOUT AND LOOKOUT-FIREMAN QUESTIONS

Mount Hood Forest—1931

Grading

E—Excellent G—Good
F—Fair U—Unsatisfactory
O—Not checked

Name.....
Inspector.....
Date.....

Lookouts and lookout firemen are required to be able to answer and do the following:

Ask yourself each question and then see if you can answer each correctly.

The page number refers to the pamphlet "Lookout and Lookout-Fireman Job List for Lookout Work on Mount Hood Forest".

Follow-up Record

1.	Do you know	what is your most important Job?	P. 1
2.	" "	What to do first upon arrival at your station?	p. 1
3.	" "	what to do first in setting up your fire finder?	p. 1
4.	" "	why the tower and platform should be rigid?	p. 1
5.	" "	what to do if it is not rigid?	p. 1
6.	" "	how to level a fire finder?	p. 3
7.	" "	the importance of keeping your fire finder level?	p. 2
8.	" "	why you should not raise the channel iron above the center of the truck?	p. 2
9.	" "	how to read an azimuth reading?	p. 5
10.	" "	how to flash to other lookouts with a mirror?	p. 4
11.	" "	how to orient your fire finder?	p. 3
12.	" "	how to read the graduations on the fire finder?	p. 5
13.	" "	how to read the vertical angle on the fire finder?	p. 6
14.	" "	how to figure out the number of minutes between each graduation?	p. 6
15.	" "	how to convert azimuth reading to compass reading?	p. 7
16.	" "	how to orient the map on the fire finder?	p. 4
17.	" "	what to do when you have your fire finder ready for use?	p. 4
18.	" "	how to apply the township plat to the base map?	p. 9
19.	" "	what all the symbols on the fire plan map represent	p. 8

20.	"	"	"	how sections are numbered in full and fractional parts?	p. 8
21.	"	"	"	how to tell a township and range line on the map?	p. 9
22.	"	"	"	how to tell a section line on the map	p. 9
23.	"	"	"	how a section corner witness tree would be marked?	p. 9
24.	"	"	"	how to start learning the topographic features?	p. 10
25.	"	"	"	how to apply the map to the area you see?	p. 10
26.	"	"	"	how many check problems to work for the Ranger to check	p. 10
27.	"	"	"	what to fill out on the blank forms for false and industrial smokes?	p. 10
28.	"	"	"	how to fill out a lookout fire report?	p. 11
29.	"	"	"	why you should make a pencil dot on the map at the spot which represents the location of the fire?	p. 11
30.	"	"	"	what to do when the map and topography do not agree where you locate the fire?	p. 12
31.	"	"	"	how to figure out the width of the fire?	p. 13
32.	"	"	"	who gives the names to the fires?	p. 13
33.	"	"	"	to whom to report all fires seen?	p. 13
34.	"	"	"	the order in which to report data about fire?	p. 14
35.	"	"	"	what to do after reporting a fire?	p. 14
36.	"	"	"	what action follows the reporting of a fire.	p. 14
37.	"	"	"	what to do when a lightning storm is approaching?	p. 15
38.	"	"	"	what to do during a lightning storm?	p. 15
39.	"	"	"	what report to fill out for each lightning storm?	p. 15
40.	"	"	"	why you should report lightning strikes to the Dispatchers?	p. 15
41.	"	"	"	what time to make your daily telephone report?	p. 15
42.	"	"	"	what to report in your daily reports?	p. 15
43.	"	"	"	why you have regular hour to go for water?	p. 18
44.	"	"	"	why you should watch airplanes which go over the forest?	p. 18

(There are 59 questions in all. This number is included to indicate the kind of questions and degree of detail used.)

As soon as the fire finders are set up, all lookouts are requested to take ten complete readings on ten different objects, such as rock slides, meadows, lone trees, etc., and fill out a complete fire report, as though each were an actual fire and keep them for inspection. Then, in the event some unforeseen emergency arises just after the instructor's arrival at the lookout station, these ten reports can be checked over quickly for accuracy and the lookout's errors corrected so that you can feel certain that he can report a fire. The special written instructions and job list prepared by his Ranger also are read and the lookout is asked to explain them.

The following topics are covered by the Rangers in preparing the special written instructions.

Statement to each man of his responsibility in fire control for the job he is assigned to under ordinary conditions and under extreme emergency conditions.

Why he is placed at the certain station and the reason for picking the location of that station for fire control.

What area is he responsible for.

What special fire hazards are around each station and his responsibility for handling same before and during a fire.

What responsibility he has on law enforcement for his unit.

What responsibility on checking on campers on his unit.

What his responsibility is in connection with rest of the fire organization.

What his responsibility is when the telephone line is out of order so that he can get a call through or repair the line.

What his responsibility is for teaching other short-term men about fire control.

Issuing camp fire permits.

Responsibility of Fireman and Patrolman to keep lookouts informed on special hazards, such as campers camping in dangerous places out of regular forest camps, location of donkey engines on logging operations, etc.

Responsibility for keeping trails open.

Responsibility for keeping pasture fences in repair.

Responsibility for keeping in first-class condition fire tools, and where.

Specific instructions on the following:

What things should always be taken while on patrol.

(List incomplete)

He is required to explain the use of his locating chart which consists of a list of azimuths and vertical angle readings and the location as to township, range, section and quarter section of certain described prominent topographic features which have been located by the Ranger or some other competent man. This is done for the purpose of assisting the lookout in determining distance over flat rolling country so that he will be able to pick out the described points and locate them on the map and from that point determine the location of a fire and other topographic features.

Example of Chart:

Azimuth	Vertical Angle	Twp.	Rge.	Sec.	1/4 Sec.	Description
160 15'	3	4 S.	6 E.	21	NE 1/4 NE 1/4	Rock slide below saddle
180 45'	2 15'	4 S.	6 E.	30	NW 1/4 NE 1/4	Lone tree on ridge

If the lookout knows his work well, it takes about four hours to go over his topics with him.

After arriving at a fireman's station, he is asked for the special written instructions and job list furnished him by his Ranger and his rating sheet in the fire plan and the same procedure as in the lookout inspection is followed. A reminder list for firemen and patrolment jobs is used for the purpose of grading. Any special jobs which are listed in the Ranger's special instructions also are covered.

Following is the fireman's reminder list. (In part. 26 questions in all)

REMINDER LIST FOR FIRE-CHASER BEFORE A FIRE IS REPORTED

Follow-up Record

Have you studied the Western Fire Fighter's Manual on fire fighting, Chapter 7, from cover to cover? Do you understand and can you remember what it is all about, and how to apply it?

- | | |
|--|--|
| 1. Are your fire tools and equipment in first class condition? | |
| 2. Are fire tools and equipment ready for a quick get-away? | |
| 3. Is your personal equipment for 3 days packed ready to go to a fire? | |
| 4. Are your emergency rations and mess outfits ready for quick get-away? | |
| 5. Is your fireman kit and compass complete and intact? | |
| 6. Do you know positively where you can get 2 or more men, near your station, for fire-fighting? | |
| 7. Do you know where all the forks of the trails are on your unit and are they posted with guide signs? | |
| 8. Do you know where the section lines cross the trails and are they posted? | |
| 9. Can you make a free-hand sketch of trails, creeks, mountains, etc., of your unit? | |
| 10. Rain clothing may be needed before you return from the fire. | |
| 11. If you use tobacco, do you keep extra tobacco in your pack? | |
| 12. Have you your night light for traveling along trails, candle bug, or lantern, ready to light and go? | |
| 13. Do you know when an IE-1 should be served? | |

Most of the firemen and patrolmen are selected for special jobs in

the overhead on large fires and are required to learn all they can concerning that job. A list is given him relative to the job for which he is selected in the overhead; for organizing and equipping large fire crews quickly, fire chief, camp superintendent, camp boss, foreman, strawboss, scout, etc., and he is required to work out the instructions and explain the meaning of each reminder, as though he were doing it on a real fire. For example: he is acting as a strawboss and he arrives at the fire with his imaginary crew ready to work. He picks out two men with axes who are to start slashing and instructs them how and where to do the work; another man is chosen to remove the brush, is instructed what to do with the brush, etc., until all the men are assigned to some work. This is tried out for all types of surface cover in order to give practice in hearing his own voice issuing instructions and in sizing up how to use the men and what work should be done first. Then he comes back over his fire line and if he finds any one man or several men that are doing unnecessary work on the line and not getting required length of line out of the work they are performing, he immediately instructs the men on proper methods.

For follow-up on pacing several measured courses are laid out around each station through the brush and over logs. The guard is asked how many of his paces it takes him to cover the courses. Then his pacing over these courses is checked for accuracy.

His errors having been corrected and his work rated and placed on his rating chart, a written report in triplicate is made, one copy for the guard, one for the Ranger and one for the instructor. The rating charts and written reports are filed at Ranger headquarters for permanent records at the end of the season. Follow-up next year on weak subjects of each man until check off completed.

The Ranger is requested to see that the guard is instructed further on certain subjects, if necessary, and to report back when the guard has been properly trained so that the completed subjects may be checked off.

Upon arrival at an improvement camp the rating chart of each man is checked over and discussed with the foreman. Then the weak points are gone over with the man.

Each man in an improvement crew is selected by the Ranger and foreman for a special job in the fire suppression overhead and each must be capable to act as a strawboss on a fire.

According to my observation and knowledge strawbosses are the backbone of fire suppression. They put over the actual work done on the ground and they make a success or failure of the plan of attack on a fire. Therefore, one cannot go too far in training men for these strawboss jobs. A first class strawboss makes a good foreman and so on up to fire chief.

The following is a list of the jobs in which a strawboss is trained.
Form 51-MH

REMINDER AND INSPECTION LIST

Fire Strawboss Duties

Reference Book:

P Western Fire Fighters Manual Chapter 7, 1924

MH Short term Hand Book Mt. Hood Section

Grading

E—Excellent G—Good

F—Fair U—Unsatisfactory

O—Not checked

Name.....

Inspector.....

Date.....

Follow instructions given you by foreman.

Follow instructions given you by camp boss regarding camp management and time keeping.

Always have a notebook, pencil and map with you.

Check over your reminder list to make sure you do not overlook any jobs.

Organizing Fire Crews: MH 68

Follow-up Record

Strawboss A Duties:

1. Sign men to different crews by writing fire fighters' number on a tool line on a strawboss tool list.
MH68B—68C
2. Write tool line number and strawboss' initial on fire fighter's identification tag. Return tag to fire fighter
MH—68B—68C
3. Send fire fighter to Strawboss B to get his tools. Point B out to him. MH 68B—68C
4. After each strawboss list is filled, give copy of list to the strawboss to check his crew before leaving for the fire line. MH 68B

Strawboss B Duties: MH 68B

5. Get identification tag from fire fighter. MH 68B
6. See which strawboss and tool line he was assigned to
MH 68B
7. Return identification tag to fire fighter.
8. Call off the tools corresponding to the line number for the strawboss crew to which he was assigned.
MH 68B
9. See that the tools are given to fire fighters. MH 68B
10. Send him down to Strawboss C. Point C out to him.
MH 68B

Strawboss C Duties

11. Put up a stake with the initials of each strawboss be-

hind which to line his men. MH 68D

- 12. Get identification tag from fire fighter MH 68D
- 13. See to which strawboss he was assigned. MH 68D
- 14. Return identification tag to fire fighter. MH 68D
- 15. Take fire fighter to proper strawboss line or stake. MH 68D
- 16. Tell him to stay there for further orders. MH 68D

Time Keeping:

- 17. Keep in your time book the number, name and address of men working in your crew.
- 18. Turn the time for your crew in to the timekeeper in writing each night, for the hours each man worked under you during the day and the rate.
- 19. Let each fire fighter know the number of hours turned in and the rate each day.
- 20. Turn your own time in to the timekeeper each day.
- 21. Write your initials on the fire fighter's identification tag.

Handling Crews:

- 22. Let the crew know you are their boss and that they are to follow you.
- 23. Instruct your crew on what you want done and show how you want it done.
- 24. Do not annoy crew with unnecessary instructions.
- 25. If you need help or equipment send a fire fighter after same with a written note.
- 26. Stay on the fire line with your crew, direct and instruct them. You must be there to handle emergencies.

(There are 171 items in this list. The remainder are omitted for lack of space.)

Each foreman of a crew is trained first on his own time by the Ranger, if possible. Otherwise a specially trained man is assigned to his crew who does the training and also is a laborer in the crew. However, it is the duty of the foreman to see that his men are trained.

The method of training used for a strawboss is to give each man in the crew an opportunity to actually direct fire suppression work, using the rest of the men in the crew for his fire fighting crew. The men are asked to do only what the strawboss tells them to do. Different types of ground cover are selected and the man chosen to act as strawboss in turn will start the crew building fire line. They actually build enough line so that each man is lined up and working, thus getting real experience. The strawboss then moves among his men and instructs the ones who are doing unnecessary work and shows them how he wishes the line built. This gives the men the practice of working crews and hearing their voices issue instructions and does much toward giving them confidence.

The crew then criticizes the acting strawboss, telling him which, if any, instructions he issued were not clear to them. This is done in order that the strawboss may overcome the fault of issuing instructions that cannot be heard and are not clearly understood. This training is continued three times a week until all have made a good showing. Men who do not seem to be able to fill the strawboss job are reported to the Ranger and the others are rated according to their ability.

The practice of organizing a large number of fire fighters into strawboss working units and equipping them with fire tools is repeated until each man knows how to perform the different duties. This creates team work.

We endeavor to avoid delays caused by one or two men trying to equip and line up large numbers of fire fighters into strawboss crews. Men who come in gangs from a city or town are separated into different strawboss crews, as they are often difficult to handle. With a little practice in this method 100 fire fighters can be signed in, equipped and separated into strawboss crews in approximately 12 minutes.

Following is our method of organizing strawboss crews.

(Note. The instructions cover 5 pages. This is a sample only, P. K.)

When the fire fighters arrive, order them to line up so that they can be signed in. Fallers and partners, laborers and special job men are to be lined up in their respective lines.

Pick out some of the fire fighters to assist in passing out the tools, as directed by the tool men.

Start numbering men with No. 20; then there is no possibility for the fire fighter's number being confused with a tool number.

Discussions on small dummy fires are carried on in order to give practice in picking out dangerous places, according to the surface cover, topography, wind and where the places of greatest spread would be.

Get away time for the crew is tried out for truck and foot travel. For foot travel each man is assigned certain tools and equipment and food supplies to carry to the fire, for which he is responsible. For truck travel certain men are assigned to load tool boxes, while others get beds and food supplies together. A list is pasted inside the tool box so each man knows what to put in.

Key men from as many Ranger Districts as can possibly be spared are sent to going fires and given an opportunity to put in actual use the pre-training in the different overhead jobs. The Ranger and myself give as much personal attention and instructions to the men as we can without taking any possible chances of the fire getting away.

One of these key men is selected for fire chief and goes with the Ranger to see what is done and he is given every chance, subject to the Ranger's approval, to make the plan of attack and to issue orders for having the plan of attack put into action. Other men are assigned to fire line work.

Another of the key men is given the Camp Superintendent's work to do and other camp superintendent's pupils are his helpers. Every night a meeting is held to discuss that day's work and to make plans for the next

day.

The camp superintendent's job is to take care of all the needs of the fire chief at the back of the fire line, so the fire chief can spend his time on the fire line. In giving follow-up training on this job, a fire is outlined and the instructor acts as fire chief. He tells the camp superintendent what he wants done and then the camp superintendent goes through the motions of getting the equipment, putting on his helpers, instructing them as to what to move first etc., until each duty in the reminder list for that job is covered.

Following is the camp superintendent's reminder list of duties for the man to work out.

Camp Superintendent's Duties

This organization is for the sole purpose of handling all back of the line operations and to aid the fire chief and crew bosses in all possible ways to get the fire out with the least cost, smallest area burned and in the quickest time.

The Camp Superintendent organizes and directs time keeping, supplies and equipment, transportation, camp construction, cooks and sanitation activities for several camps.

Extra help should be put on whenever the Camp Superintendent or Camp Boss cannot keep up with the needs of the Fire Chief or Crew Boss and cannot keep up his records. Put on an assistant to handle a block of jobs; as order man, timekeeper, transportation man, handy man, etc.

When the job gets too large for the assistants, extra men will have to be put on to assist them, as for example: The order man may have to put on a warehouse foreman, checkers warehouse clerk, property custodian, etc.

This outline is arranged so that each man put on will know what his main duties and responsibilities are.

Camp Boss:

The camp boss has charge of all camp activities in one fire camp. He may personally handle time keeping, commissary, transportation, equipment, supplies and cooks. In large camps he may have assistants to do some of the jobs.

Extra help should be put on whenever you cannot keep up with the needs of the fire chief or crew boss. Put on an assistant to handle a block of jobs, as order man, timekeeper, transportation or handy man, etc.

Grading

E—Excellent G—Good
F—Fair U—Unsatisfactory
O—Not checked

Name.....
Inspector.....
Date.....

Camp Boss:

Follow-up Record

Arrival of Supplies and Setting Up Camp:

- 1. Have fire tools separated into piles of a kind.
- 2. Check tools against invoice.
- 3. Timekeeper ready to sign in fire fighters.
- 4. Supplies separated into piles of each kind.

5. Transportation of equipment to fire line.
6. Camp construction started.
7. Orders of fire chief taken care of.
8. Assist in organization of strawboss crews.
9. Pick out fire fighters to assist in the above until the crews are organized; then let the men go to the fire line.

Camp Management:

10. Location of warehouse. cooks, kitchen, etc.
See drawing.
11. Know where each crew sleeps and name of men in them
12. Know who comes into camp and what he wants.
13. Keep a record of who comes to camp and when.

Cooks and Flunkies:

14. Appoint head cook who will be responsible for his help.
15. Shifts for day and night cooks. P. 90
16. Night cook to put up lunches for following day.
17. Give cook extra help when extra large crews are fed.
18. Have fire fighters return dishes to flunkies. Have box or tub for plates, cups, silverware and garbage.
19. Tell the cook what time you want the meals ready.
20. Tell the cook how many men to prepare for.
21. Use smaller mess outfits when crew is reduced.

Camp Construction:

50. See drawing for planning fire camp.
51. Fall snags which could fall into the camp.
52. Slash out a place for each foreman's crew to sleep.
53. Post sign for each foreman's location.
54. Put up tents for food supplies, if weather conditions make it necessary.
55. Put up tents for Camp Superintendent's office, if weather conditions make it necessary.
56. Put up flies for men to sleep under if weather conditions make it necessary.
57. Fence off camp superintendent's office. P. 180
58. Fence off warehouse area.
59. Fence off place to store personal belongings of fire fighters.
60. Fence off hay and grain to keep stock out.
61. Warming fires for overhead and crews. P. 170

Communication:

62. Telephone line construction to subcamp and main camp
63. Telephone line maintenance.

Roads and Trails:

64. Road and trail repair or new construction.

Traffic:

- 65. Reg.—care of traffic.
- 66. Reg.—car parking, etc.

For Cooks:

- 67. Have railing constructed around the working quarters of the cooks. P. 170
- 68. Construct mess tables for feeding men cafeteria style.
- 69. Have garbage pits dug, covered daily with earth P. 170
- 70. Pile case goods so they will act as shelves.
- 71. Pile each of a kind together for quick inventory. P. 180

Sanitation:

- 72. Construct pole and pit toilets. Ps. 17, 180. Have signs posted and lights at night.
- 73. Have a place to wash, with sign posted. P. 170
- 74. Place for watering horses, sign posted.

(And so on, 225 items in all)

Follow-up training on men selected for fire chief is done by going over the reminder list for that job and having the men explain in detail the meaning of each reminder. An old fire may be used for the problem, or a fire problem may be made up. Then the selected fire chief fights the imaginary fire, listing by name the men he will use in the overhead jobs, number of tools and kind for each crew, points of attack on the fire, number of men required to control fire before 10 a. m. of following day, etc.

The fire foreman job is handled in the same way. using the reminder list for his job.

A scout map of a dummy fire is made to get the man's judgment of burning conditions according to the ground cover.

Following are the reminder lists for the fire chief, fire foreman and fire scout jobs.

Fire Chief Duties

Reminder and Inspection List

Page Nos. refer to Fire Fighter's Manual, Chapter VII

District Ranger to act as Director and Instructor to the Fire Chief on a fire, in order to develop capable men for handling fires and sector of large fires.

- | | |
|-------------------------------------|---------|
| 1. Get facts about fire. | |
| 2. Wire facts down or map | |
| 3. Location of fire | |
| 4. Cause | |
| 5. Size | |
| 6. Location of spot fires and sizes | |
| 7. What is the fire burning in | |
| 8. What will the fire spread into | |
| 9. Slope | P. 20 |
| 10. Humidity | P.10-11 |

11. Wind direction and velocity. expected change in direction.
12. Rate of spread
13. Approximate number of snags to cut
14. Natural fire break locations
15. How is the fire spreading—on the surface or overhead
16. How to get to fire by roads and trails
17. If man caused, has LE-1 been served.

How to get facts about fire:

18. Write down facts or map
19. Men already on the fire
20. Observation on way to fire
21. From description furnished before going to fire.
22. By going around the fire.
23. From scouts on the fire.

Use of Facts for Planning Attack:

24. Have a definite reason for everything you do. P. 23
 25. Type of work needed to stop spread. P. 26-33
 26. Approximate size of fire by the time crew will arrive
 27. Approximate amount of work needed.
 28. Time in hours to do the work before 10 a. m. or possible blow-up.
 29. Time in hours for crew to reach fire.
 30. Humidity factor. P. 11
 31. No. of men to complete work before 10 a. m. P. 3
 32. Amount and kind of fire equipment needed. MH P. 5
- Make rough sketch map of fire area covering the following:
33. Points of attack, main fire and spot fires. Ps. 23, 24, 25.
 34. No. of men to the crew. P. 33
 35. Sector for each foreman. Ps. 33, 34
 36. Location of fire camps. Ps. 3, 6
 37. What foreman to camp at the different camps
 38. No. of strawboss crews to a foreman. P. 3

Sub Fire Camps, P. 6:

39. Sub-camps to be established the first day.

Organization:

40. Whenever fire fighters are ordered, figure out who will direct the work of the men on the fire.
41. The first man sent to a fire would know who is acting as fire chief and should consider these duties and act accordingly until further orders.

Instruction to Overhead:

Camp Superintendent's Instructions:

42. Write down instructions or have Camp Supt. write them

in 877 book as to:

43. No. of men and type, as laborers, fallers, etc.
44. Equipment, amount and kind
45. Food supplies for no. of days and no. of men
46. Where sub-fire camps are to be established, for how many men, etc.
47. Time for breakfast so crew can eat and be ready to start working at daylight. Ps. 22, 42
48. Camp Supt. should go right ahead with his duties and put on men to help him, as needed.
49. Special equipment, kind and where to send same
50. Send written message to Camp Supt. for further general supplies or equipment.

Foremen's Instructions:

Write down or have foremen write down in 877 book the following:

51. Who the strawbosses are
52. No. of men to a strawboss crew, 8 to 12 men
53. Kind of tools for each crew (standard or special equipment)
54. Foreman to start his strawbosses organizing his fire crew and equipping each man
55. Foreman report back to Fire Chief after organizing is started.

(For the fire chief there are 345 items; for the fire foreman, 287; and for the fire scout, 4 pages unnumbered. Sorry we cannot publish all. P. K.)

The protective assistant plays an important part in follow-up training. His contacts are made over the telephone in the following manner.

As soon as a lookout is established at his station and has his fire finder set up, he reports to the Protective Assistant. The protective assistant then gives him a list of points on which to take azimuth and vertical angle readings and the points are to be located according to township, range, section and quarter section. When the lookout has completed the work, he communicates with the protective assistant who checks the readings and the locations. The protective assistant has a record book with the correct readings and locations from that particular lookout point so that the work can be checked in a few minutes. If there are any errors, the protective assistant discusses the type of error and has the lookout orient or relevel his instrument or correct his map reading. After the errors are straightened out over the phone, a new list is given the lookout, who again reports back to the protective assistant when he has completed these readings.

The protective assistant also checks the lookout on mirror flashings to other stations who are to take reading on his flashes and phone them to the protective assistant.

During days of low humidity the protective assistant has the lookouts take readings on several points in order to keep them looking around and at their fire finders.

The protective assistant calls the lookouts to inform them about the time a check look is to be taken and listens for the alarm clock to ring during the conversation.

He also follows up on inspection reports of instructor or telephone instructions from the ranger, instructing the lookouts and guards on certain work which can be handled over the telephone. When he knows the lookouts and guards can do the work, he reports it to the Ranger or instructor, who then check off the completed job in his book.

He calls the firemen or other guards by phone to discuss fire, public relations or law enforcement problems with them to go over a check list of duties or to assign special topics to be studied by a certain fireman who, he knows, needs more training.

He keeps a record and notifies the Rangers concerning the guards who need personal training so that it may be taken care of.

Starting posts for fire chasing have been established in the unsurveyed area and compass readings have been taken from the post to known points and a record kept of them. A fireman is sent to a post and told to take compass readings on certain points which are afterward phoned to the protective assistant who checks him on his readings.

Our training and follow-up training of improvement crews is not as effective as it might be, since, due to lack of funds for this purpose, most of it has to be worked in after the crew has done a day's work or on Sundays. Just because a man is hired to work in the Forest Service and told he is to fill a strawboss or foreman job in fire suppression overhead does not make him a director of fire fighters without training. I believe every man hired by the Forest Service should be capable of directing men on a fire or handling certain jobs in the overhead. You can always hire common labor for fire fighters, but it would be poor policy to permit them to handle the fire. Without training the improvement crews, the situation is almost as bad. No matter how good one or two men are on a large fire, the whole situation simmers down to how good *we* are as a trained organization. Millions of dollars of Uncle Sam's money go to pay for the fire that goes over the hill and much green timber is destroyed due to the untrained man's inefficiency.

What do our accessible roads into fire areas amount to if the improvement crews, who are supposed to be part of the overhead of trained fire fighters, are not sufficiently trained?

I do not believe we go far enough in training men on actual fires. There are only a few months in a year when fires burn and generally there are only one or two large fires on a Forest. On these fires we should put all the year long men, as well as short term key men, we can spare, so that they can gain experience and special training in fire control work. Just because a man has worked for the Forest Service a long time does not make him an A-1 overhead man on large fires, unless he has actually worked on fires. It takes practice for good team work, and if we have not had the practice we do not work together in the most efficient manner.

I would recommend an allotment large enough, or approval to use F.

F. money, for training men on the fires and for training improvement crews before fires start.

We do a great deal of guard training and training of local cooperators night and Sundays which is not a continuous benefit to the Forest Service because often times they move away. To make lasting the services of men with outstanding fire suppression ability and trustworthyness who have actually been in charge of a sector on fires and have proven their worth, they could be given an identification card of merit which would be honored when presented to a Forest officer. Very often men come from other Forests or States and tell us they can do this, that and the other thing, but at times we are doubtful of their ability and do not care to take a chance on them. Thus it is often the case that very worthy men who could be used in the overhead organization are used as laborers. The identification merit card, universally used, would eliminate this.

Organization of fire crews has to take place on every large fire. I should like to see some uniform practice developed along this line so when men from other districts and forests get together on a fire, we can all work in unison, using one system of organizing fire crews into strawboss crews and equipping them with fire tools.

A complete instruction book under one cover for short term men is a service publication which is needed badly. I know it would not fit all forests in every respect, but about 90 per cent of it could be generally used on all forests. We have a great many calls for such a book by men who want to study up on the work.

Follow up training is very essential for, without it, in many instances the only time the guard takes to brush up on his work is when he knows some one is coming around to inspect him and until that time he feels that he knows it all. However, I have never found an over-trained guard or improvement crew man. Year long men also make mistakes and we all need special fire training. Due to the annual turn-over of short term men we have a big training and follow up training job each year.

TRAINING RECORD

Mount Hood National Forest

(Insert in Short-term Hand Book.
File at end of season)

.....
Ranger District.

Name of Man.....

Position and Dates.....

” ”

” ”

” ”

Number of Seasons worked on Mt. Hood Forest.....

Number Seasons worked on other Forests.....

Subjects trained for in 193.....:

.....
.....
.....

Subjects in which more training is needed. Give name of job and number of each duty to be followed up. Instructor initial each duty. Check off when knowledge is satisfactory.

.....
.....
.....
.....

REVIEWS

NATIONAL PLANNING—The view of a Merchandising Executive, by Grover A. Whalen, General Manager, John Wanamaker, New York, published in the Taylor Society Bulletin, February, 1932.

This article is reviewed just as a subject of general interest and not because it has any direct connection with work. The idea of planning industries on a national scale was scarcely thought of before the depression, but during the last year or two it is one of the most discussed subjects. The discussion is not by politicians or fanatics but by our best business men and economists. Mr. Whalen lists eight "plans" for National planning, all by well known conservative individuals or groups. In addition there have been many other suggestions, many of which while valuable do not go far enough to be called plans. Some of these, written for popular distribution by distinguished men, are interesting, instructive, and well worth reading. "Business Adrift", by Dean Donham of Harvard, and "Successful Living in this Machine Age" by Edward A. Filene, Boston Merchant, are examples of this type of writing.

It is now recognized that no attempt at national planning will be made as a result of this depression, but business men believe that it must come sometime, and it may come a good deal sooner than we expect.

Some of the best known of the plans listed by Whalen are the following:

(1) *The Swope Plan*. This is the best known of all. It provides for planning and control through Trade Associations. Membership in the Association would be compulsory for companies employing fifty or more people. The Association rulings would be mandatory.

(2) *The U. S. Chamber of Commerce Plan*, provides for a national economic council with advisory, not mandatory, powers.

(3) *The Prof. Charles A. Beard's Plan* provides also for a "National Economic Council", but one authorized by Congress. Its duties would be to coordinate finance, operation, and distribution. He would have also a "Board of Strategy and Planning".

All modern business men believe in planning. In fact they believe that success is closely related to the quality of the planning effort. This applies to the individual business enterprise, but when it comes to putting all business into one plan it is just too big to grasp. We get lost in the sheer magnitude of the proposal. Yet most business leaders believe in highly specialized organizations. "They also believe that from our business experience many creative measures of planning may be adopted". Yet they hesitate before the ultimate step in planning with which we are confronted.

Mr. Whalen's proposal is somewhat in the nature of a combination of the Swope and the U. S. Chamber of Commerce plans. He provides for a National Economic Council which acts through trade associations. Whalen would first organize a "National Federation of Business". This Federation would represent the business and industrial interests of the nation. It would be composed of the outstanding leaders in industry and commerce. Within

it would be created an economic council as its fact finding authority on which plans would be based. Its primary purpose would be to ascertain the fundamental factors underlying any industrial or commercial problem and to provide for the industry affected authoritative information on which that industry's Trade Association must act. "Its purpose would be to definitely stabilize employment in the particular industry affected; it would eliminate destructive competition and waste."

"The fact findings of the Council should be final and mandatory and have full force of governmental authority back of them". This does not necessarily mean that it would not be a businessman's organization. The closer it is tied to operating business the better, but anything of this magnitude must have governmental supervision. The plan would enable business itself to meet its own needs for control and to prevent the waste and suffering due to flooded markets and periodic depressions.

It would work something like this: The fact-finding council would determine, for example, that the needs of the nation for a year are, say, a billion units. This conclusion would be arrived at after ascertaining the facts underlying the production, consumption, and markets of that commodity. The decision would be passed on to the trade association of the commodity, which in turn, acting through its members, would provide for the production of the billion units.

Or let us suppose the commodity is one with which we are familiar—lumber. The council determines from business trends and consumption statistics that next year the nation will need only 20 billion feet of lumber. It notifies the lumber trade association that its quota for next year is 20 billion feet. The central council of the association, on the basis of available producing ability by species, determines regional quotas. Each regional council then determines the quota of each producer. The needed amount is produced. The nation gets what it can consume and is spared the wastes of over-production, glutted markets, idle mills, and business failures.

Such planning is perhaps more needed in the wood producing industries than in any other, and many foresters now believe that production control in the United States will eventually come through some such method as this rather than through the small unit control methods of fifty years ago in Europe.

The lumber illustration only is mine. The plan is Mr. Whalen's. Further, he says that while his plan may not have the right approach, he is convinced that planning on a national scale is both possible and practical. Further, it is coming; the question is when and how.

SUGGESTIONS FOR DISCUSSION

Carter has given us a good account of the methods in use on the Mount Hood. What do you think of it. Fundamentally, it means, does it not, that fire training requires infinite detail. Jobs have been studied, analyzed and standardized, not in a general way, but to the last detail—hundreds of items. Instead of hiring men and just telling them to put out fires, they are told every move to make, taught how to make it, and given tests and practice in it. This means that fire control is becoming a highly skilled job—almost a profession—that it is thoroughly standardized and that the standards are systematically established and maintained.

“A standard is neither established nor maintained by the simple process of publishing the specifications which define it. Because individuals vary in their capacities to understand specifications and to acquire new patterns of habit, continuous inspection of efforts, as manifested in means, methods and results, and explanation and correction of errors, methods and results, are essential to that educational process which constitutes the establishment of standards”.—H. S. Pearson, Director Taylor Society.

The experience of the past twenty-five years has taught us much with regard to effective methods. We do not want the young men just starting in to learn as we did—it takes too long and costs too much in mistakes. So we make the ways we have learned, standard and teach them to beginners. So far we all agree, but the question is, how teach? What is the quickest dependable way of training a man so that he will respond properly, use good judgment and not make too costly mistakes. But can we train them to “use good judgment”? We can at least give them a basis for judgment, without which they could only guess or experiment.

What about the long check-lists? Just to show you that check-lists is not a problem peculiarly our own. I am quoting the following from “Scientific Management in American Industry”, page 404: “It is doubtful whether any one best master check list of items to be reviewed and questions to be asked will be evolved in the near future. A number of such check lists and questions exist today; others will undoubtedly be composed. But some scheme logically and approximately thorough in its coverage of relevant items is essential as a guide and as a basis for the selection of the items to be studied in any one given situation”.

This last sentence interests me most. Check lists seem necessary, but also it seems they serve best when developed for a particular situation. It was for that reason that I did not think it necessary to publish all of any one of Carter’s lists. All of you, I presume, use a list of some kind but few of you use the same detail as Carter. What about it? To check so many items takes time. Does it pay? Do you know? Some of you will say that you do not have the time, but are you sure that if you used more detail in your training and inspections that you would not ultimately have more time.

What I’m trying to get at is this, such questions can be settled only by experiments. Some of us believe one thing and some another. Good reliable tests are better than arguments. What I would like to see would be

for some of you to make follow-up training an "administrative study" and see what you can find out about it. And some others who do not care for so broad a field might make a study of check lists. What kind of list is best, general or detailed and to what degree? How to use them—cover all points or just "sample plots"? Which gives best results in test cases? Another thing you might experiment with is the telephone as a training medium. I know of no other Forest that uses it in the same systematic way that Carter describes. Perhaps there are; some may use it more. But there is little in writing. It still seems an unexplored field.

QUESTIONS

1. Discuss Carter's methods in general. Are they too bookish, too detailed, too formal? Or are they systematic, adequate, scientific? What is your general impression? What suggestions?
2. Discuss his use of telephone? Criticisms? Suggestions for further development? Is there danger of depending too much on the phone, or is there greater danger in using it too little?
3. Discuss the idea of very detailed check lists, their proper function and method of use—or abuse. Why are they not more used?
4. What are some of the important things that Carter has left out?
5. The three subjects covered by Vetter, Kuhns, and Carter are closely related. If you prefer, discuss the complete subject of fire control training.

DISCUSSIONS OF THIS LESSON ARE REQUESTED BY JULY 1.

This year has in many ways been an experiment. Some of the changes we have tried have worked well, other not so well. As a further experiment I am going to try publishing a number in the middle of the field season. Your first reaction will be against it. Possibly you will continue to disapprove; we will find out. It may be that we carry our distinction between seasons too far. Of course, you are busy but you cannot work at one kind of job all the time. Besides the best time to discuss a subject like this is in the field while you are doing it. Time? Everyone traveling in the field is occasionally forced to wait—for a train or for someone who is late. Why not use one of these waiting periods to put down some of your thoughts and feelings about follow-up training. Such discussions would be of particular value because the needs of the job would be fresh in your mind. Further, the rush season varies somewhat by Regions. Anyhow, let's give it a try.

DISCUSSION OF NO. 6, PLANNING THE TRAINING PROGRAM

The number of discussions published this time has been reduced partly to make room to illustrate more of Carter's check lists and partly because there has been no great variety of ideas expressed. Vetter's paper seemed to contain no controversial subjects. You are not using the charts he suggests, but I presume you recognize that the chart is merely a tool, and that the thing done by the chart can be done in other ways. Most of the ideas suggested are accepted and are being followed in a way.

There is one exception to this, however, and I was somewhat surprised that it got by without comment. I refer to the camp organization wherein each trainee is trained only in the things he needs. At all camps to which I have been all men with few exceptions, were given the same training. Everybody did the same things. I think most of you plan to continue that method this spring. There are reasons for it as well as against it. Experience is mostly on one side. Possibly you prefer to discuss that in connection with Kuhn's paper, it being a part of camp organization.

I do not believe that Vetter intended to suggest that the subjects he used for illustration in his charts were necessarily subjects that should be in the program. They were used merely for illustration. The subjects for inclusion were determined by a process of analysis and elimination. First the analysis of the job; what does a guard do? Next priorities—which of these things are most important; which do the guards already know; then, which can best be taught on the job and which in camp? As was said in some of the discussions, this is not new. You have considered all these things, but more or less, you have carried the analysis in your head. Is it better to write it down? Do you ever get a real good analysis of a job without writing it down? The training program is not complete until you have covered both camp and follow-up. In this number Carter shows that in the analysis of some jobs alone he finds two or three hundred items. Some of you will say that so much detail defeats our purpose; others that it is the lack of detail in training that causes mistakes on the job. How are we going to find out which is right?

M. H. DAVIS

CLEVELAND

SAN DIEGO, CALIF.

I have just finished reading Vetter's article on the above subject and Keplinger's comments. It is my opinion that Keplinger has hit the key to this whole training problem in his comment, "Another thing that has bothered me is this: I have met in the camps men who have been guards for two, three, or four years and have never been taught the technique—of handling a one man fire. They are wondering to themselves whether or not they will fall down on their first fire. Now, I have wondered whether you really have any right to entrust the safety of the peoples property to such a man".

It has been my observation on a number of fires that something must be decidedly wrong when men who have been "trained" at two or three training camps still show every indication of being "lost" when put to the test of suppression. Many District Rangers are still forced to attend to routine jobs in camp and on the line because of lack of properly trained personnel. What is the reason? Haven't we lost sight of our real training job and the fact that our greatest problem is that of fire suppression?

The average guard training camp is operated for about three days. We have attempted during these periods to make our personnel proficient in a multiplicity of subjects ranging from the proper method to fly a flag to the proper approach of a smoker in a "no smoking" area. If we were to enumerate the number of subjects taught (?) to our trainees at the average school we would find that we were "feeding" them from thirty to seventy or more distinct items. Why?

Provision is made in our ranger work plans for training the protective force *on the job* as well as at the guard school. Haven't we been overloading the guard school programs with too wide a spread of subjects? Since our final test of preparedness is the manner in which we perform when the alarm is sounded, isn't our principle training job one of preparing the men for the job of fire fighting? Can we expect to adequately train our short term men in this highly important work in less than three days? Aren't we going a step too far when we try to include prevention and presuppression *with suppression* in such a short period?

My thought is this: Why not devote the guard school training to suppression, and have the Rangers give the prevention and presuppression training *on the job*? Suppression is a big subject and usually requires years for a year long officer to assimilate.

Aside from the lookouts, our suppression training job is one of technique and organization. If our technique is sound and our organization is functioning smoothly the problem is 75 per cent solved. The other 25 per cent is up to the judgment and strategy of the District Ranger in charge of the fire and to the conditions existent in the form of weather, cover, protective improvements, etc.

The primary requisite in training is a definite objective. Isn't our objective to train our men so that they know *first* what to do, and *second* how to do it?

All fires are at some stage individual, or one man fires. It follows, then, that our suppression men should know what to do on small fires and how to do it. How many of us can honestly say that all of our protective men have qualified in this under our past training methods?

Fires not controlled in the initial stages become secondary or organization fires. Can we say that our guard training has succeeded in providing adequately for our organization needs?

Well balanced training should provide for thorough handling of a minimum number of subjects rather than "scratching the surface" in a wide spread of subjects.

Without going into detail, which is unnecessary here, the following is suggested for a three day guard training camp. It is assumed that proper consideration will be given the details of assignment of trainers and preparation of subjects.

FIRST DAY: Intensive training in what to do and how to do it on individual fires. This would involve the technique of individual attack and provide the necessary "ground work" for a full understanding of line construction. Breaking up of the group into the smallest possible crews consistent with available trainers is desirable. Advance preparation on the part of the trainers is of course necessary. This training leads up to the secondary period.

SECOND DAY: *Organization Fires*. The training to provide the necessary personnel to properly organize on a major fire and to relieve the District Ranger in charge of the fire to the fullest extent of all routine and minor duties.

Select two men from each Ranger District for intensive training in the following subjects:

1. Camp Bosses
2. Timekeepers
3. Sector Bosses (more than two men if qualified men available.)

The balance of the men will be given intensive training as crewleaders. The day to be devoted to an intensive period of training covering all of the ramifications of the job.

The men so trained should be assigned to this work on major fires within their districts during the year. This provides for *trained* men for the *key* jobs. The following year they can be assigned for training in another subject so that over a period of three or four years they will have been thoroughly trained in all fire work.

THIRD DAY: Actual practice of entire group on carefully prepared fire problems—actual fires, if possible. This provides for actual training in each of the key positions under working conditions. Final discussion, by groups to provide for finishing touches.

The above training provides for the “preparatory” work. This can go only to a limited extent and must be followed by actual practice on fires. Assignment of inexperienced men to going fires for training purposes should go far toward providing the feeling of personal confidence that comes only through actual experience.

It is realized that such a program is not necessary or desirable on all forests but on fire forests where suppression is our major job, can we expect to get by with less?

Under present economic conditions, where our turn-over is negligible it might be possible to alternate our training, providing for prevention and presuppression one year and suppression the next. At any rate, prevention and presuppression can be provided for by job training on the part of the District Ranger as provide in the work plan, BUT CAN SUPPRESSION?

J. E. RYAN, K. A. KLEHM

KANIKSU

NEWPORT, WASHINGTON

1. In a general way, most of the things suggested by Vetter are being done. It is believed that a certain amount of formality should be recognized as essential in any part of program; also that too much formality will result in more harm than good, especially in connection with the guard training program. Vetter's scheme adds to the job load of guard training and requires additional time that can be spent to better advantage. It also adds more refinement to the details of the job that are not considered necessary.

2. The bulk of the information for which the forms are designed to record can be secured by the district rangers taking a part as trainers and securing first hand information from personal contact with the trainees.

3. The proposed plans which contemplate specialists as trainers for each subject, requires too much personnel, and it is believed satisfactory results can be obtained by other methods. For instance, groups of 7 to 10

men may be assigned to one trainer who conducts the group through the entire course. Men who are weak in some subjects can be given additional training as the work proceeds. The conference room for guard training should, to a very large extent, be out on the ground, where the work is actually carried out. Too many side issues can easily be injected into the scheme of guard training, which will result in weakening the course in its fundamental purpose of teaching men to find a fire, getting to it and putting it out.

4. (1) Guard school program
- (2) Selection of personnel and number of trainees
- (3) Selection of sites
- (4) Preliminary jobs on sites
- (5) Supplies and equipment
- (6) Supervision of training activities

J. W. HUMPHREY

MANTI

EPHRAIM, UTAH

1. Perhaps we should watch to see that we do not go into so much refinement in our plans that some of the real essentials are overlooked or lost in a mass of detail. The guards' school; in fact, any school where there are a number of participants, affords a better opportunity for training than the personal instruction of one student, since a chance is offered to both trainers and trainees to pick up points that might easily slip by unnoticed in the individual training method. The guard training plan as outlined by Vetter lists the needs of the men who are to be given training and emphasizes some of the methods to be followed in putting over the lessons and while it is a rather formal program, going into considerable detail, I believe it is all right. I do not recall of ever attending a training camp, school, or meeting, where there was any failure due to over-preparation.

2. The last paragraph of Vetter's plan states that the failure of a trainee to respond indicates a weakness in the type of training or that the guard was unsuited for the position. There is one point to be considered here and that is that we might profitably spend more time in the selection of guards. This is not always practical since our guards are often local men where there is little or no choice in their selection. There is a possibility also that the training school method may not be practical on some forests because of the limited number of men to be trained. This leaves only one thing to be done and that is to adopt the individual training method. Where there are but few men to train, we are more apt to slight the training work than where the numbers are greater and the work is more of a job.

3. In selecting men for forest guards where there are but few men to choose from, the training may be thorough enough, but the guard might be assigned to other work for so long a period, because of favorable weather conditions, that it may be the second year or longer before he will have use for the special training he has received. If he is given the same training the second season as he received the year before, there is a possibility that the subject will lack interest for him and when the time comes to put his training into practice he may fail on the job. Where a man is employed only part time, unless he conscientiously writes down instructions on the

important points, he may forget the instructions he has received by the time he has an opportunity to put them to use.

4. The essential steps in a guard training program should follow pretty much Vetter's outline. I would first suggest, however, where this is practical, that in selecting men for guard positions as much care as possible be given to see that the men selected are satisfactory material. Some changes and perhaps consolidations in his tables may be possible without eliminating any of the essential features of the plan. It might be possible, also, to provide considerably more training when fires occur than has been given in the past. The greater weakness in forest guards who have received training, it seems to me, is that even though they are exceptionally good workers, they are not always able to keep the work progressing satisfactorily. A swamping crew may be allowed to get too far ahead of the men making the trench, or the swamping crew may not be able to keep out of the way of the hoedaggers. On small fires there should be an opportunity to offer a few timely suggestions to guards and others. It is possible, also, when occasion presents itself, to improve the method of approach on the part of forest guards in law enforcement, making public contacts, etc. The thing we should not overlook is to record our observations when they offer a chance to improve in the training and development of the men working under us.

J. N. TEMPLER

HELENA

HELENA, MONTANA

1. Using the term "discussion" in heading this paper is really presumptuous since, having participated in no such training projects, I am not qualified to submit any comment of any value.

However, in studying the guard training program submitted by V. P. Vetter I was agreeably surprised at the lack of lectures, talks, etc., and the preponderance of training by example. Only recently, the following comment was made to the discussion as to whether or not a man in charge of a fire should take time to lecture his incoming crew on methods, etc., before stringing them out:

"I have heard one or two talks of this kind given at the beginning of guard training camps where the talker honestly believed that he got away big. I think he mistook a certain amount of forbearance and innate politeness in his hearers for approval."

Well, from what I heard yesterday from a grazing permittee who has been attending, rather assiduously, the frequent stock meetings held in the immediate past I am led to believe that the above comment applies rather extensively as regards Forest Service orators.

WM. B. FAY

COCHETOPA

SALIDA, COLO.

(1) The program prepared by Vetter is a complete analysis of both the method and training needed for guards. While it appears both intricate and confusing and covers overlapping details, it is thorough and complete as to all factors which must be considered in the outlining and preparation of a program of training. However, in its application many details would

be omitted as common knowledge, and assignments would cover a broad field, with the responsibility for methods of procedure resting with the individual.

Guards, like rangers, possess certain qualifications and experience which make them eligible for appointment or hire. This experience must be given consideration in providing training. In Vetter's program it is assumed that neither the guards or trainers have demonstrated any ability but each must be considered as novices, and prepared for their jobs entirely through a program of training.

The main point in training for any job is to let the men know what is expected of them, and the methods by which the work is to be done. Then they should be tested to see that they know. To accomplish this, neither an elaborate or formal program is necessary. A course of study could be prescribed; that is, methods and standards could be listed for the information of the new man, then by tests and demonstrations, check could be made on his accomplishments and corrective measures pursued until they had learned to do the jobs satisfactorily. On the Angeles a large size training school for guards is probably essential but in R-2 where only a few are employed, the expense would be out of proportion to the benefit derived. I believe the best plan is to turn the guards over to a ranger of broad experience who possesses the faculty of handling men, and within a short time if proper selection has been made of the man for the guard position, he will have absorbed the details and methods of his job and be progressing satisfactorily in his position.

After studying over Vetter's program, I have wondered if we were not attempting to take men of limited experience and provide them with training and experience within the Service which they should have acquired elsewhere before being eligible for the job.

(2) The program would be simplified to include only two charts consisting of a consolidation of training needs and classification, Charts 2 and 5, and Training Modes, Chart 7. Each training activity would conform to a method similar in outline to that shown on page 7 for construction of a fire line. The program so far as it is applicable to the Director, Trainer and Supervisor could be eliminated as they are distinctly organization matters and have been acquired by administrative officers through past experience and do not need to be taken up in detail in the guard's program. In this statement I refer principally to the items listed under A "The Guard School Program" page 1.

(3) It is true that we must be systematic in our planning, and ascertain the best methods for doing the job and see that each man learns the things he should know, but we must not lose sight of the fact that he should also know why he does them. The factors listed under "Individual" training page 10, as determined by District Rangers are more applicable to R-2 conditions than the other items included in the program.

(4) Determination of training needs; analyze each position and determine the qualifications required. Study each applicant and ascertain the training needed to fill the position.

Training Program; prepare list of activities in which each man will need training.

Selection of Trainers; list all men qualified to be selected as trainers.

Method of training; preparation of a method for giving training in each activity.

Valuation of results; check up and review of work to determine success or failure of training methods or the individual.

B. C. SATERBO

SNOQUALMIE

SEATTLE, WASH.

1. The plan as laid down by Mr. Vetter strikes me as quite complete and thorough. It is mighty fine as a guide to keep the camp lined up in the way that it should travel. It would appear to me that a training camp run absolutely according to such plan would lack the necessary flexibility to follow leads that would develop after the plan was made or even after the camp was partly over.

2. Vetter's Chart No. 8 "Individual Training Needs" is the best of the bunch. It is essential that the ranger get the judgment of the other trainers on his men and he can check against their judgment on subsequent training. But Vetter wants a monthly report from the ranger on his training activity in addition to inspections by the training director and members of the supervisor's staff. As the ranger keeps a diary which should cover that along with other jobs I fail to see any other idea than piling on extra work. The ranger makes a monthly work plan report as well. If the information on these reports has any value I do not know, if so it should be just as valuable later after the rush of fire season. Training is of high value but why attach reports during rush season.

3. Having a capable man as director with his plans for training drawn up and trainers properly instructed and pepped up we are all set as to the mechanics of training camp. Then we approach the trainees and they have certain reactions to the training which must be reckoned with to get our work across. I wonder if it would not be a good idea to have the plan flexible so that the director could change his program as he saw the needs after the first half day in contact with trainees. He could by questionnaires or oral questioning get their slant. Maybe a certain item listed on the program would be found superfluous and some item left off would prove to be needed.

4. 1. Analysis of training needs of the forest as to each individual job and training needed to develop overhead for large organizations in case of fires. 2. Choosing trainers for each activity and having them adequately prepared to present their topics interestingly and clearly. 3. Listing the men to be trained and the subjects in which they need instructions. 4. Directing the program of the camp in such manner that it moves along snappily and does not kill interest. 5. Compiling a training needs list for each trainee with any pertinent comments by trainers to help the ranger in follow up training. The above are the essential steps in training as I see them and I want to add a few words as to training modes. Doing the job and demonstration are of course first wherever they can be used, but

I want to speak a word for conference as a mode. I note that Mr. Vetter has listed "Morale building" under the head of the lecture mode. Lectures may build morale but often tears it down. If the trainee feels that he is "in conference" rather than being talked "at" he is in a more receptive mood.

D. E. CLARK

ARAPAHO

HOT SULPHUR SPRINGS, COLO.

Lesson 6.

On this forest our fire problem is no problem at all, as compared to that on "Fire" forests. We have had an average of 6 fires annually since 1909, the number varying from zero to 15 any one year. The average number, as shown by the table below, has not materially increased since the period 1909-13, although the hazards have increased considerably.

<i>Period</i>	<i>No. of fires</i>	<i>Average No.</i>	<i>% of Class B</i>	<i>% of Class C</i>
1909-13	31	6.2	25.	16.
1914-19	37	6.2	46.	11.
1920-25	28	4.7	32	14
1926-1931*	40	6.5	20	10

*Note: Includes two bad years from a climatic standpoint.

During the first two periods we had a lookout—he was done away with in 1920 or 1921. It is safe to assume from the above that our system of cooperative fire wardens, and cooperators is working. No doubt, it can be improved.

The primary duty of a cooperator is to detect fires and report them to a party responsible for taking action. The primary duty of a fire warden is to take action on a fire in the absence of a forest officer.

The possibilities in the training of these men is not parallel to that of regularly employed guards, mainly because we are not in a position to "direct" their activities. The modes of training might be classified similarly to those listed by Vetter; i. e., Doing the Job, Demonstration, Etc., but the possibilities for using the best method are limited for evident reasons.

The first step in training these men should be that of working up an interest. Efforts should be concentrated on the weak spots in the organization. Men already interested are apt to resent a PR program directed toward them. They will usually approach the subject of fire themselves if given an opportunity. The training of cooperators is mainly that of getting and keeping them interested.

The job of training fire wardens and crew bosses is mainly that of interest and the methods of suppressing small fires. Whenever opportunity permits, a definite attempt should be made to get these men out on actual fires, particularly those whose experience is limited. Fire training camps may be possible in a few cases; community picnics may offer the opportunity in many others. Discussion as a last substitute is not limited but should require some forethought.

To assign various phases of training to different officers is not logical in our case. The job is that of the District Ranger. Our most important need in a warden and cooperator training program I believe is a thorough analysis to find and concentrate on the weak spots. The best method for

securing improvement is strictly a local problem.

J. W. FARRELL

CHALLIS

CHALLIS, IDAHO

1. In my opinion Vetter has prepared a very creditable discussion on guard training. His outlines and charts point the way to analyze what I would otherwise term as an abstract job. I am strong for simplicity in doing our work, and would be tempted to confine our efforts to the very practical needs for guard training, such as fire suppression technique and to get results in the easiest way. It does strike me, however, that our starting point lacks a well built foundation. If we really knew the weak points in our training program we could probably rectify the mistake readily without a great deal of paper analysis.

2. I believe our main job is to study out the training methods to be used as outlined by Vetter under "Method for training", "Construction of a fire line". I question the necessity for some of the other detailed tabulations.

4. (a) Analyze the jobs the guards are expected to perform.

(b) Determine the training which may and should be effectively given by group training.

(c) Selection of suitable sites for group training. Should choose a site which would enable us to present the problems under actual conditions.

(d) Outline training methods for each job.

(e) Assign trainers to the various phases to be covered, and attempt to select the best qualified man in each line.

(f) Outline list of equipment needed for each training step.

(g) Make arrangements for subsistence and quarters for guards while in session.

(h) Make advance preparation by laying out "dummy fires", etc.

(i) Provide for methods of checking results of each training step, by allowing each trainer to demonstrate what he has or has not learned.

(j) Arrange for close supervision of the various training activities.

(k) Arrange for definite follow up of each training activity by giving individual training in the various activities.

(l) Provide time for each guard to become fully acquainted with his units, preferably by assignment to trail and telephone line work immediately preceding the fire season.

E. A. SNOW

ARAPAHO

HOT SULPHUR SPRINGS, COLO.

The Arapaho Forest does not have any guards so we are not especially concerned in an elaborate guard training program, as outlined by Mr. Vetter. However, I can see that with forests that have a large number of temporary guards every year, some such a guard training system as outlined by Mr. Vetter is necessary.

I agree with Kep that it is absolutely necessary that we make sure that each man is trained in the phase of work that he needs training in, and to do this successfully it is necessary to set up some kind of a chart such as Vetter has done. I also agree with Vetter that training of men who will train the guards is very necessary; too often we take for granted the fact

that a Ranger or other Forest officer is thoroughly capable and familiar with all phases of work that he is going to teach guards and temporary men, and we tell him to go ahead and train his men in what they should do, when the Forest officer is not capable to do this training. As a result, we get half-trained men who do not know exactly what is wanted or exactly how to do the job which is required.

On this forest we try each year to give part of our Fire Wardens a short period of training in methods of building a fire line, how to mop up a fire after it has been controlled, instructions in the use of various tools, including back pack pumps which are found in our fire caches. These meetings are necessarily short and generally are held in the form of a picnic, on some Sunday, when ranchers can attend.

The District Ranger is in charge of this meeting. He demonstrates on the ground the building of a fire line, and the use of various tools, etc.; after this demonstration by the Ranger, the Fire Wardens each build some fire line and use the various tools; this is practically all training by demonstration, but we feel that with the short time available this is practically the only method of training that we can give our Fire Wardens.

WM. R. KREUTZER

COLORADO

FORT COLLINS, COLO.

Not only guards, but Rangers, Supervisors and other Forest officers need systematic and periodic training. My personal experiences seem to lead me to the conclusion that we can find a place for both the Group Conference and the Individual Training Programs. Forms, such as Vetter discusses were not used in connection with the training done here, but memorandums were prepared after the field demonstrations, conferences, and talks were given to fire wardens and coöperators. These methods somewhat modified were used in training the individuals on going forest fires, while on the jobs, and on other areas in the Forest used as demonstration and training areas.

It seems to me that there is a need for the use of record forms upon which to make records that will set forth the individual training needs of the guard, warden and foreman in all lines of forest work, such as trail construction and telephone repair work; and fighting fires. The same record should show when, where and under whose direction the required training has been completed. For the sake of simplicity one combined card—note book form—should take care of the entire record. The training job may be set up on the field card; the trainee's name and that of the trainer should appear on the card. On the reverse side of the card should be indicated the procedure or standard of the training job or jobs to which the trainee has been assigned or detailed. A concise, concrete record would be of greater value in indicating not only the kind, amount, quantity and quality of training wanted or needed in any given case, but would show just how much of the required training was actually given the trainee by quantity or percentage ratings. For instance, if the quantity of intensive training required marking ponderosa pine is 30 man-days; the trainee having completed 15 days gets a rating of 50%. This shows definitely that he has not completed his training and how much more is needed.

Vetter's "Good," "Fair," or "Poor" in the "Job and Training Needs Analysis Chart do not appear to be definite enough as to just how good, how fair or how poor the individual is. There is no standard by which we can measure our trainee. A trainee, for example, who has been apprenticed for three years in a machine shop to learn the machinists trade, other things being equal, (he being an average student) becomes a full-fledged journeyman machinist upon completing the period of time set up as the standard of measurement of training required. If he fails to complete the training, either in time or type of workmanship necessary, he is still an apprentice and not a journeyman. He will be given a full rating if he completes the entire period of three years training and proves himself capable of handling all phases of the machinist's work up to the required quality and quantity standards. If this is true, then, it would seem that our trainees should be required to serve a given unit of time under certain established standards of performance.

The factors of time, quantity of work, quality of work, and the trainee to whom the training is to be given must be considered in any plan for a training program.

It is my opinion that the shortest unit of time required to give the standard unit of training desirable to the average trainee should govern in the preparation of simple plans or programs for training and in keeping records of such training on individual trainees.

In July, 1931, the School of Forestry of the Colorado Agricultural College arranged for cooperation in training. Sixteen forest students were given field training in the vicinity of Pingree Park and various other points in the Colorado National Forest. Prof. W. J. Morrill and Professor R. E. Ford assigned me to the field training in timber sales inspection and forest fire suppression.

We visited three sawmills and checked upon conditions on the ground. I used the timber management plan for the Poudre Working Circle, the timber sale survey map and report for the Bennett Creek and Beaver Creek Units and two sale agreements as the basis of the inspection of the cutting areas. Each student kept notes of his inspection and free discussions with millmen, operators, rangers, and men working in the woods were encouraged. Contract requirements were stressed and each student was requested and encouraged to inspect the areas and operations in accordance with the terms of these agreements as standards. Ratings were not given, but I believe the training would have been more satisfactory if definite ratings were established and given on the note-book reports of each student.

In giving the forest fire methods training the sixteen students were organized into three forest firefighting crews under three students qualified as leaders in accordance with the Forest Service-Forest School Cooperative Fire Plan. I outlined a fire area and problem on an old burn and gave them the direction of the wind and the assumed fire front, and right and left flanks of the assumed fire using an old fire line as the example or problem fire line. No fires were set, but the old burn served our purpose.

Each squad was required to scout out the fire line, particularly on the front of the fire. While on the line (marginal limits) each student was

required to explain what he would do, why, when how and where. This procedure resulted in a thorough discussion of plans, methods, procedure, control, when a fire is out, when safe, etc., at various points around the area. The right and wrong methods with reasons therefor were pointed out and discussed.

A blackboard chalk talk was given at the Forestry Lodge in Pingree Park covering all of the vital points that were previously covered on the ground and the subjects were opened to free questioning and discussions by the students, their leaders, and the College representatives.

After this, I gave field demonstrations to these students and Professors Ford and Morris. After showing them how, and giving them an opportunity to discuss my methods, I required the members of each of the three crews to make a given amount of fire control line and trench through dense young growths of lodgepole pine and aspen timber. The leader of each crew had to lay out his control line and direct the work. After the sector was completed, the members of the other two crews were given an opportunity to criticise thoroughly this sector of the line from the notes kept by each student. This procedure was followed until all three crews were thoroughly drilled on the ground work necessary and methods to be used in handling the average forest fire in this part of the Rocky Mountain country.

A real forest fire would have afforded better training, since the fire factor would have been brought out more clearly as well as the application of the methods demonstrated and the reason for action at various points along the line. On the whole, I feel sure, however, that the students were benefited by this training and that it was well worth while, both to the Service and the College.

A. G. NORD

WASATCH

SALT LAKE CITY, UTAH

1. As P. K. points out, no man can be expected to do a good job until he learns how, and no man should be expected to do a thing until he has been in some way tested so you know that he knows. That is certainly true with our forest cooperators who make up a large part of the protective organizations of the medium and low hazard forests.

Where it is necessary, under emergencies such as 1931, to send so many men from the forests of low hazard to those of high hazard, the protective strength on the low hazard forest must be made up largely of cooperative personnel, and if they are to function as we expect them to, then the arrangements must not only be clear cut and positive, but the cooperator must have the proper knowledge of the things he is to do and how to do it.

The highly developed training outline by Vetter would not meet the situation in training cooperators. First, because it would be entirely too formal for this class of guards who will devote so little time generally to fire activity, and second because we have not gotten to the point of financing group training of such cooperators. However, the training of persons acting in the capacity of per diem guards is highly essential, and it should be planned as a forest activity to the extent necessary for preparing them in the most efficient way for the responsibilities which they are to assume in the protective organization of a forest. It often occurs that a per diem

guard on a low hazard forest must assume more responsibility in the way of organization and supervision of men on fire suppression than would fall to the average guard on a high hazard forest. It is obvious, therefore, that a well planned program for group training of per diem guards and others likely to be called into fire fighting services would undoubtedly increase the efficiency of a protective organization sufficiently to justify the expense of training.

2. Instructing and training cooperators, such as per diem guards and cooperative observers is done by the ranger through discussion and demonstrations as he makes his contacts for a working arrangement for action in fire emergency. Consequently, only essential matter which the ranger considers necessary in getting proper reports on fires or in getting sufficient action for suppression in the event the ranger cannot be reached are the things that are considered with the cooperator. Such action on the part of the ranger as will satisfy him of results will constitute the extent of the training.

Doubtless this matter of training is not as thorough as it should be, yet seldom is it possible under present methods to group this class of cooperators for training purposes. A set of training standards to be used by the ranger when making his contracts with per diem guards, no doubt, would be an invaluable guide in developing them.

Only chart No. 7 of Vetter's outline concerning training modes would be of much value as a guide to the training of per diem guards under present methods. This calls for positive training on just how things should be done and is most essential in developing full efficiency.

3. On forests that are intensively used there are opportunities, by reason of obligations placed in permits, to develop a solid protective organization through cooperative forces, even to a very high standard of fire control. But training of the cooperative personnel is the essential feature, and this to be fully practicable and most efficient should be done by the group training method. To make this possible, provision should be made for the Government to assemble the trainees and finance a central training camp on one or more of the ranger districts of each forest.

4. Under present practice, the ranger district administrative plan contemplates that the ranger will individually train and instruct his per diem guards and other classes of fire fighters who make up his protective organization.

The things which must be done in preparation to an effective program for the training of cooperative personnel should include the following as a minimum:

(1) A full knowledge of his place and the responsibilities the cooperator is to assume in the protective organization of the forest or ranger district.

(2) Action in reporting fires.

- a. How, and to whom.
- b. Promptness.
- c. Accuracy.

(3) The organization for fire suppression of man power equipment and food.

- a. Location.
- b. Transportation arrangements.
- c. Wages and time keeping.

(4) A working knowledge of hazards and behavior of fires.

- a. Time of day.
- b. According to exposures.
- c. Atmospheric conditions.

(5) That action, day or night, is required.

(6) Acceptance of getaway standards.

(7) Methods of suppression in different classes of cover—through demonstrations.

(8) To get over to the cooperator that every fire should be suppressed as early as humanly possible, the aim being to organize man power sufficiently to get all fires under control within the first burning period.

(9) Mop up, by working the hot stuff toward the interior of the burn, or by extinguishing blazes for a safe distance to the interior from the edge of the burn, at the same time endeavoring, through continuous work of extinguishing every burning ember before abandonment of the fire.

(10) The fire must be completely out before discontinuing control.

(11) Gather all evidence, reasonably possible, as to cause of fire.

(12) Get report to a forest officer at the first convenient opportunity at any stage of the fire.

(13) Release all men, except patrol, promptly after fire is safely under control.

(14) Care of tools and equipment.

